



Wisconsin Power and Light Co.  
An Alliant Energy Company

Corporate Headquarters  
4902 North Biltmore Lane  
P.O. Box 77007  
Madison, WI 53707-1007

Office: 1.800.862.6222  
[www.alliantenergy.com](http://www.alliantenergy.com)

June 11, 2007

Mr. Robert Eckdale  
Bureau of Air Management  
Wisconsin Department of Natural Resources  
P.O. Box 7921  
Madison, WI 53707-7921

Submitted electronically: [Robert.Eckdale@Wisconsin.gov](mailto:Robert.Eckdale@Wisconsin.gov)

**Re: Wisconsin Power and Light Co. comments on Natural Resources Board Order AM-32-05, Proposed Revisions to NR440 and NR446 pertaining to the Wisconsin state implementation plan for the Clean Air Mercury Rule (CAMR)**

Dear Mr. Eckdale:

The following comments are submitted on behalf of Wisconsin Power and Light Co. (WPL) regarding the Wisconsin Department of Natural Resources' (WDNR) proposed Clean Air Mercury Rule (CAMR). This submittal includes technical comments on various aspects of the rule proposal and supplements WPL's statement at the Madison public hearing presented on May 23 (also included below as Attachment A). As a Wisconsin Utilities Association (WUA) member, WPL supports the comments and supplemental studies submitted by this organization that were conducted as a joint effort by the utility companies directly impacted by this rule proposal. WPL respectfully submits the following supplemental comments for WDNR consideration:

- 1) WPL strongly supports unaltered full adoption of the EPA's Federal CAMR model rules that includes interstate banking and trading (WDNR Option 3).***
- 2) Going beyond Federal CAMR is too risky given the status of mercury emissions measurement and control technology performance.***
- 3) WPL requests WDNR address technical corrections and procedural deficiencies.***

WPL further explains the company's rationale for each of these critical points below.

Mr. Robert Eckdale

Page 2

June 11, 2007

**1) WPL strongly supports unaltered full adoption of the EPA's Federal CAMR model rules that includes interstate banking and trading (WDNR Option 3).**

The EPA carefully designed the Federal CAMR to work in conjunction with the Clean Air Interstate Rule (CAIR) as a cost-effective and streamlined approach to effectively reduce emissions and efficiently reduce utility-attributable mercury deposition in the United States. The WDNR's proposed CAMR rule requires accelerated controls on compliance timeframes that are difficult to achieve, especially given the required outages necessary as well as escalated nationwide demand for labor and materials to complete air pollution control equipment installations for utility companies. WPL alone is currently planning to implement 20-plus emission control projects at our Wisconsin power plants by 2015 for compliance with CAIR and CAMR.

WPL believes the proposed rule must provide for additional compliance flexibility, which is consistent with the CAMR policies being adopted by neighboring states<sup>1</sup>. WPL is actively implementing necessary measures to reduce mercury emissions at our Wisconsin power plants and shares the following technical considerations to emphasize the need for more balanced regulation.

The WDNR rule proposal fails to address several critical issues that cause it to be unduly burdensome and very difficult to implement. As proposed, the WDNR's CAMR revisions present many concerns with respect to alignment with Federal rules, technical feasibility for compliance, increased costs for WPL customers, and impacts to Wisconsin's future energy policies including electric reliability.

More specifically, WPL's concerns with the WDNR's proposed rule are that it:

- Does not allow inter-state or intra-state trading;
- Does not permit banking of early excess mercury reductions;
- Creates an unworkable and overly complex allocation methodology; and,
- Retires any unused new unit set-aside allocations that could be crucial to compliance of existing generation.

---

<sup>1</sup> Iowa has adopted the EPA's Federal CAMR rules without revisions including full interstate banking and trading. Minnesota authorizes rate recovery for all expenses related to mercury control, and will require a 90% reduction in mercury emissions at just three generating facilities whose previous technology investments facilitate these reductions. Offset provisions also reduce the effective emission reduction rate to 70% for one of the two affected utilities. Illinois provides for three temporary alternatives to compliance with the performance standard, including in-system trading, a technology performance exemption, and a multi-emission alternative. The proposed Michigan regulations are currently being revised, but will include provisions for technical and economic rule exemptions. Michigan's rule will also allow in-state trading.

Mr. Robert Eckdale

Page 3

June 11, 2007

WPL believes that the proposed rule needs to accept trading as the Federal EPA model CAMR allows, because there is significant uncertainty regarding the level of mercury reduction achievable; this is needed as a supplemental compliance option. The WDNR's proposed trading restriction eliminates the flexibility necessary for compliance demonstration given the possibility that utilities may not be able to achieve an annual emission cap due to the potential margin of error possibly upwards of plus/minus 30%-50%, both in terms of measured mercury levels and also emissions control performance.

Furthermore, the WDNR's elimination of banking (that is recommended under the Federal CAMR policy) not only makes the compliance risk even greater, it also creates major disincentives to implementing early mercury reductions. Simply put, there are not sufficient compliance options in the proposed rule; if a utility cannot achieve the annual mercury cap, the remaining choices include: (1) fuel switching to natural gas (if available); (2) revising dispatch to more expensive purchase power; or, (3) de-rating or shutting down the unit. These are unworkable options for WPL, its customers, and the State's economy.

WPL's emissions plan for CAMR compliance is based on installation of mercury controls at our power plants in Wisconsin. However, the option of purchasing emission allowances and banking early reductions must be allowed to supplement periodic shortfalls and cover forced outages or unexpected events.

The proposed rule's output-based allocation methodology creates a moving target for compliance planning purposes. The proposed baseline calculation method uses the two year period which is six and seven years prior to the allocation period; the baseline will be re-calculated every two years (starting in year 2009). This means that allocations will be based on the operating performance for six and seven years prior. If a unit's operation is impacted by a major outage during the baseline adjustment period, then the unit may have difficulty achieving compliance with its future allocations. A major outage can be 15% to 20% of an operating year which would result in a mercury emission allocation period that would be much lower than the future actual operating year. WPL will be undertaking large pollution control projects in the next 10 years, which will likely include additional outage periods, and will impact a unit's mercury allocation. Moreover, WPL supports the Federal CAMR model trading rule allowance issuance approach and requests WDNR adopt this allocation methodology that is based on heat input and does not create unnecessary, overly complex updating provisions.

In addition, the WDNR's proposed rule will retire any unused new unit set-aside allocations. The presumption that existing units will not need unused allocations is unjustified, especially given the increased stringency of the proposed rule that would not allow trading or banking. WPL believes that any unused new unit set-aside should be re-allocated to existing affected units.

**2) Going beyond Federal CAMR is too risky given the status of mercury emissions measurement and control technology performance.**

The WDNR's proposed rule inappropriately concludes that 90% control could ultimately be attained from all coal-fired generation units in Wisconsin. Technical experts and vendors cannot and will not say with confidence that 90% plus effective mercury control technologies are commercially available for all affected power plants. WPL is unable to find any mercury control equipment vendor willing to guarantee 90% control on a long-term basis. Adoption of a 90% reduction requirement at this time is technically infeasible and allows no room for underperformance. In fact, testing on a limited number of units has shown that while some are able to achieve 90% reduction over a limited averaging period (up to 30-days), a similar level of performance is wholly unachievable for other units using identical technology. The Department of Energy's (DOE's) most recent update on progress of the National Energy Technology Laboratory's (NETL) mercury control field testing indicates that the earliest possible timing for commercial demonstration of advanced mercury control technologies capable of 90% capture is 2010<sup>2</sup>. The WDNR's intention to adopt rules by June 30, 2010 for 90% reductions is misguided. Additional time is needed for proving the commercial feasibility and deployment of these advanced technologies. The WDNR also suggests incentives will be developed to encourage early achievement of the 90% reduction by 2015, yet structures a rule that contradicts this goal by restricting banking.

WDNR's rule must take into the consideration the technical challenges that utilities face, both in measuring and determining how to reduce power plant mercury emissions, including:

- Continuous Emissions Monitoring (CEMs) installations - implementation schedule and remaining mercury emissions measurement uncertainties;
- WPL unit-specific suitability for mercury controls - physical constraints and other design implications for electric generation units; and,
- Multi-media considerations - critical for environmentally responsible mercury control.

---

<sup>2</sup> Reference: DOE/NETL's Phase II Mercury Control Technology Field Testing Program UPDATED Economic Analysis of Activated Carbon Injection (May 2007)  
[http://www.netl.doe.gov/technologies/coalpower/ewr/mercury/pubs/Phase\\_II\\_UPDATED\\_Mercury\\_Control\\_Economic\\_Analysis.pdf](http://www.netl.doe.gov/technologies/coalpower/ewr/mercury/pubs/Phase_II_UPDATED_Mercury_Control_Economic_Analysis.pdf)

Mr. Robert Eckdale

Page 5

June 11, 2007

### **Continuous Emissions Monitoring (CEMs) Installations**

WPL met with WDNR staff on April 24, 2007 to discuss pending revision of the state's existing mercury rule and also explain our company's plans to better measure mercury through installation of CEMs at our plants. In this meeting, WPL emphasized the complexities of measuring mercury with these new monitors. WPL wishes to re-emphasize this very important aspect in light of the WDNR's proposed CAMR rule. Prior to coming to a conclusion that the level of achievable mercury reductions beyond federal requirements are possible, the company believes it is first necessary to establish reliable baseline emissions levels and performance characteristics of mercury monitors.

WPL has accelerated the installation of mercury CEMs at all of our coal-fired power plants so that we can have some time with the data from these monitors to better plan for emissions reductions and compliance reporting. WPL started installations in July 2006 at our Edgewater facility. This has not been a minor or inexpensive effort for our company. Mercury CEMs installations have entailed significant structural modifications, such as:

- Installation of additional ports (to install the mercury sampling probe);
- Stack platforms (additions or modifications to existing platforms to access new mercury equipment);
- Shelters (to house climate controlled mercury equipment);
- Elevators (due to frequent on-going maintenance needs);
- Electrical instrumentation (to power shelters, heated sample umbilical, heated probe, elevators, etc);
- Water supply (certain mercury systems require de-ionized water as part of their mercury analysis); and,
- Communications systems (needed fiber optics, Ethernet, etc. to communicate with existing CEMS computer).

WPL costs for mercury CEMs installations are expected to be in the range of \$3 to \$5 million.

Furthermore, there are significant calibrations needed for mercury CEMs including:

- Daily elemental mercury calibrations;
- Weekly ionic mercury linearities (challenge the mercury system with low, mid, and high level ionic mercury from an ionic mercury calibrator);
- Quarterly elemental mercury linearities (challenge the mercury system three times with low, mid, and high levels of elemental mercury from an elemental mercury calibrator); and,
- Quarterly ionic and elemental calibrator certifications (ship both calibrators to a certified NIST laboratory for required USEPA recertification).

Mr. Robert Eckdale

Page 6

June 11, 2007

Following initial equipment installation and certification, WPL expects that each plant will require at least one additional full-time person to perform necessary compliance tasks that are required on a daily, weekly, monthly, quarterly and semi-annual basis - including: CEMs equipment maintenance tasks; emission data quality assurance validations; and, relative accuracy test audits (RATAs). Finally, WPL has encountered several other issues - ranging from lack of technical support, to on-going equipment changes, to finding spare parts - all due to the newness of the mercury CEMs technology.

WPL emphasizes that EPA's monitoring protocols must be adopted without exception in the WDNR's final CAMR requirements. Then the experience from all mercury monitors in the country can be consistently evaluated and improvements made more efficiently in Wisconsin.

#### **WPL Unit-specific Suitability for Mercury Controls**

WPL engineering staff are compiling critical plant configuration data necessary for designing mercury emissions control systems, including the selection of sorbents for pilot-testing to determine those best-suited for WPL power plants and fuel characteristics. The problem of mercury emissions control is not a one size fits all type of solution and can be impacted by a variety of plant-specific factors, such as:

- operating temperature of the flue gas,
- presence of flue gas conditioning chemicals,
- characteristics of the fuel being burned - such as chlorine and sulfur contents,
- boiler efficiency,
- unburned carbon levels,
- ductwork geometry, and
- existing air pollution control equipment configuration, especially electrostatic precipitator (ESP) design.

To further complicate the situation, there are a multitude of sorbents that are just becoming available in the commercial markets. Selecting the material that is most efficient at mercury removal requires more field testing to understand the emission reductions that can be achieved at each power plant.

Another complication is the variability of mercury emission capture caused by changes in coal composition and boiler performance that can impact the quantity of unburned carbon present in the fly-ash, which results in a need to increase or decrease the quantity of sorbent injected.

Mr. Robert Eckdale

Page 7

June 11, 2007

WPL's coal-fired units are listed below with a summary of key parameters relevant to mercury emissions control design. Given that each plant has its own operational differences, the planned reductions in mercury emissions will be highly speculative until technology is installed and operated under a range of electric generating conditions.

Summary of WPL Coal-Unit Design Parameters for Mercury Emissions Control								
Plant	Unit	Size (MW)	Boiler Type	Fuel (Note 1)	Flue Gas Temperature (°F)	Flue Gas Conditioning	ESP Type	SCA (Note 2) (ft <sup>2</sup> /1000 acfm)
Columbia	1	512	T-fired	PRB	790-820	Yes	Hot	268
Columbia	2	512	T-fired	PRB	245-300	Yes	Cold	292
Edgewater	3	70	Cyclone	PRB	220-350	No	Cold	318
Edgewater	4	330	Cyclone	PRB	250-310	Yes	Cold	200
Edgewater	5	380	Wall- fired	PRB	220-300	No	Cold	563
Nelson Dewey	1	110	Cyclone	80% PRB/ 20% Pet Coke	260-310	No	Mid	273
Nelson Dewey	2	110	Cyclone	80% PRB/ 20% Pet Coke	260-310	No	Mid	273
Notes:								
1) PRB = Powder River Basin								
2) SCA = Specific Collection Area - ratio of plate to gas quantity								

The following are more details on the technology performance considerations for WPL power plants.

WPL's units predominantly burn western powder-river basin (PRB) subbituminous coals, which is desirable due to low sulfur content that results in less SO<sub>2</sub> emissions, but possesses fuel characteristics mentioned above that make it more difficult to treat for mercury emissions. One of these difficulties is the manner in which the mercury in PRB fuels interacts in the boiler and flue gas. There are two major forms of mercury emitted

during combustion of coal: (1) oxidized (or divalent), which is water-soluble and amenable to control; and (2) elemental, which is not highly water-soluble or amenable to control. Preliminary stack testing of the PRB coals burned by WPL indicates mercury speciation that is predominantly elemental.

WPL will need to further evaluate the use of a hot-side ESP at Columbia 1 that increases the presence of elemental mercury due to elevated flue gas temperatures. WPL has mid-range temperature ESPs at Nelson Dewey 1 and 2 which may present similar issues as Columbia 1. WPL also uses flue gas conditioning systems at some units in order to improve the ESP particulate control efficiency, but this has been shown to reduce effectiveness of conventional activated carbon injection. The specific collection area (SCA) is a potential indicator of mercury control limitations since small ESPs (SCA's about 250 ft<sup>2</sup>/1000 acfm or less) may have operational difficulties handling the extra collection burden resulting from sorbent injection.

In 2005 WPL hired an outside firm to perform an initial screening and engineering assessment of the optimal mercury control technology for Edgewater 5. The results of this evaluation suggest that specially treated sorbent will be necessary to effectively control mercury at Edgewater 5, due to the combustion of PRB coal at this unit. Even with specially treated sorbents, WPL anticipates that any level of injection upstream of the ESP is likely to contaminate the fly-ash and render it unusable for reasons explained below.

As an option to upstream injection, WPL has also evaluated implementation of TOXECON II as a technology that possibly could preserve the Edgewater 5 unit fly-ash for re-use as a cement replacement in concrete. However, WPL is not optimistic that this newer technology approach is feasible. Further field research is required to determine long-term removal capability for TOXECON II - specifically, to better evaluate the spray nozzle technology that distributes the sorbent within the later stages of the ESP, including optimizing mixing conditions to prevent slippage of untreated flue gas mercury. Costly mechanical modifications to the later stages of the ESP would also be necessary in order to allow for installation of the nozzle grid distribution system. WPL is planning to install mercury controls for full-scale field testing at Edgewater 5 later this year.

Determination of the appropriate mercury emissions control approach will require better understanding of the long-term emissions and further pilot-testing of various specialized sorbents or other non-commercial technologies. The level of reduction achievable will require optimization of the system and hopefully can achieve reductions as high as 90%, but the feasibility of this quite simply is not known yet. WPL supports mercury reductions at our Wisconsin power plants, but also believes that given the global nature of these emissions, it is reasonable to request Wisconsin rules that follow Federal rules until technology performance is better understood.



Mr. Robert Eckdale

Page 9

June 11, 2007

### **Multi-Media Considerations**

WPL is a leader in beneficial reuse of our coal combustion products (CCP). In 2006, over 250,000 tons of CCP were beneficially reused by WPL - this is a rate of about 70% overall, significantly above the national average of 42%. Approximately 185,000 tons of the WPL 2006 CCP reuse (roughly 70%) was fly-ash that is used as cement replacement in concrete.

The reuse of CCP is environmentally beneficial, because it saves energy and natural resources by avoiding disposal in landfills, while also reducing greenhouse gas emissions at an equivalent rate of approximately one ton of CO<sub>2</sub> for every ton of fly-ash substituted for cement. Fly-ash that is used in concrete also saves money for large public and private construction projects requiring concrete. The use of fly-ash in concrete offsets the production of portland cement powder which is a very energy-intensive process that emits approximately one ton of CO<sub>2</sub> for every ton of cement.<sup>3</sup>

Mercury control upstream of the ESP causes commingling of the activated carbon and fly-ash. WPL expects this to result in an adverse affect on the marketability of our CCP, especially fly-ash, making these byproducts non-saleable and subject to disposal. Given that ACI upstream of the ESP is the predominant approach available for mercury controls, the non-compatibility of this technology with our successful CCP programs is of significant concern. The obstacles to make the fly-ash saleable as a cement replacement are significant and include three main hurdles: (1) air entrainment characteristics (too much ACI makes ash unable to pass this suitability test); (2) color-preference for beige ash (ACI makes it too grey); and, (3) recently EPA-enacted Maximum Achievable Control Technology (MACT) standards for Portland cement plants<sup>4</sup>. WPL is actively seeking alternative injection approaches, such as in latter stages of the ESP discussed above, but the feasibility and effectiveness of these options simply are not known.

If WPL is not able to continue with beneficial CCP reuse of fly-ash, the company estimates the cost impact range from \$6 to \$12 million per year, depending on current capacity of the company's existing landfills that may need to be expanded or alternatively the need to pay for transportation to and disposal at offsite landfills. There is also the impact of lost fly-ash sales, which WPL estimates to be another \$2 to \$3 million per year that also factor into the cost-effectiveness and long-term economics.

---

<sup>3</sup> Reference: United States Environmental Protection Agency, *Using Coal Ash in Highway Construction: A Guide to Benefits and Impacts* (EPA-530-K-05-002, April 2005).

<sup>4</sup> The EPA issued final amendments to the Portland cement MACT standards effective December 20, 2006. The amendments ban the use of fly ash from utility boilers if the mercury content of the fly ash has increased as a result of certain utility emission controls (such as activated carbon injection), unless the cement plant can demonstrate that use of the fly ash will not increase the plant's mercury emissions.

The fate of mercury must also be considered when reducing emissions in conjunction with other emissions controls systems, specifically wet flue-gas desulfurization (or WFGD, also known as wet scrubbers) used to control SO<sub>2</sub> emissions. This combination results in mercury becoming concentrated in the scrubber discharge. Typical WFGD wastewater treatment includes pH elevation, gypsum de-saturation, heavy metal removal, coagulation and clarification. Even after this treatment, some of the mercury remains in the water and may not be permittable as a discharge. Further treatment to zero-discharge levels is unproven commercially and can cost more than \$10 million for a mid-sized power plant. The fate of mercury in zero-discharge processes is in the sludge, which would be placed in a landfill. Infeasibility of zero-discharge may dictate use of dry scrubber systems for SO<sub>2</sub> removal and the need to landfill these waste streams. WPL's point is that mercury removal must have a multi-media perspective and the WDNR's proposed rules need to allow flexibility to address these concerns not only based on cost-effectiveness, but moreover by considering the net environmental benefit achieved and ultimate fate of mercury.

### **3) WPL requests WDNR address technical corrections and procedural deficiencies.**

**Clear adoption of the Federal mercury CEMs requirements.** WPL notes that WDNR's rule does not clearly adopt the Federal EPA rules for mercury CEMs compliance demonstration, recordkeeping and reporting. This not only creates unnecessary compliance administration costs, but moreover may not be technically feasible given that CEMs equipment manufacturers have designed products to meet the EPA's federal specifications. WPL requests that WDNR's final rule adopt these requirements by reference in their entirety and without revision as found under 40 CFR Part 75, Appendices A and B.

**Corrections to the definitions for "coal" and "coal-fired electric steam generating unit" that should not include petroleum coke and tire-derived fuel.** WDNR's rule proposal incorrectly includes petroleum coke and tire-derived fuel in revised definitions to be amended under Section 7. NR 440.20(2)(eg) and (er). The EPA corrected these definitions in the final CAMR reconsideration notice with final actions taken on May 31, 2006<sup>5</sup>, as these are not properly classified as "coal" or under "coal-fired electric utility steam generating unit".

The final WDNR definitions should be consistent with the final federal EPA CAMR language adopted under 40 CFR Part 60, Subpart Da under §60.41Da - Definitions, specifically referenced below:

---

<sup>5</sup> Reference: Federal EPA Clean Air Mercury Rule (CAMR) regulatory actions, found at: <http://www.epa.gov/air/mercuryrule/rule.htm>

- *Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials (ASTM) Standard Specification for Classification of Coals by Rank D388-77, 90, 91, 95, 98a, or 99 (Reapproved 2004)€1 (incorporated by reference, see §60.17) and coal refuse. Synthetic fuels derived from coal for the purpose of creating useful heat, including but not limited to solvent-refined coal, gasified coal, coal-oil mixtures, and coal-water mixtures are included in this definition for the purposes of this subpart.*
- *Coal-fired electric utility steam generating unit means an electric utility steam generating unit that burns coal, coal refuse, or a synthetic gas derived from coal either exclusively, in any combination together, or in any combination with other fuels in any amount.*

**Consideration of procedural deficiencies in the promulgation of the proposed revisions to NR440 and NR446 (Order AM-32-05).**

The WDNR's proposal incorporates unrelated revisions to NSPS requirements that were not authorized under the original rulemaking and are not associated with the Federal CAMR implementation. WPL requests that these be removed from the final rulemaking and addressed separately under appropriate rule authorization that explains the source and supporting rationale for the revisions.

WPL also identifies potential procedural deficiencies in the promulgation of the proposed revisions to NR440 and NR446 (Order AM-32-05). WPL requests that the WDNR consider these inconsistencies in order to assure that the relevant rules are finalized using a process that provides for full public participation while also conforming to necessary legal requirements.

1. The department did not follow procedural rulemaking requirements, including Wis. Stat. § 227.16 (6), when it issued a hearing notice containing three alternative approaches (referred to as "Option 2," "Option 3," and "Option 4") for reducing mercury emissions from coal-fired electrical steam generating units as a part of the hearing notice for proposed revisions to Wis. Admin. Code § NR 446. These three options do not qualify as "general subject matter" related to anticipated rules but rather are specific options related to the revisions proposed to NR 446.

2. The inclusion of the 90% mercury emission reduction requirement (as well as other provisions in proposed Order AM-32-05) does not align with the statutory requirement for state and federal consistency with regard to the promulgation of a mercury emission standard. As a consequence, proposed Order AM-32-05 exceeds the department's statutory rulemaking authority and is inconsistent with the Scope Statement prepared by the department. A 90% emission reduction requirement is more stringent than the reduction percentage required by the federal CAMR. Likewise, the following provisions in the proposed rule are inconsistent with, or are otherwise more stringent than, the emission standards (including administrative requirements) that are associated with the federal CAMR rule:

- The failure to allow inter-state or intra-state emission trading;
- The sunseting of emission allowances granted to retired units;
- The failure to allow banking of mercury reductions;
- The creation of an unworkable and overly complex output-based allocation methodology;
- The retirement of any unused new unit set-aside allocations that could be crucial to compliance of existing generation.

The inclusion of these more stringent emission standards does not meet applicable statutory requirements contained in Wis. Stat. §§ 285.11(9) and 285.27. Further, the department did not complete the statutorily required analysis to support a finding which justifies these more stringent emission standards as required by Wis. Stat. §§ 285.11(9) and 285.27(2)(b).

3. The statute authorizing the department to promulgate an emission standard for mercury does not require a specific percent emission reduction. *See* Wis. Stat. § 285.27(2)(b). Rather, this statute directs the department to make a finding that a more stringent "standard is needed to provide adequate protection for public health or welfare" and, further, to make "a finding that the chosen compliance alternative reduces risks in the most cost-effective manner." Wis. Stat. § 285.27(2)(b)3. The department included language in proposed Order AM-32-05 focusing on a 90% mercury emission reduction requirement without first making the statutorily required findings (supported by written documentation) that residual risks to public health exist after implementing CAMR and that a 90% reduction requirement is the most cost-effective compliance alternative to reduce those risks. This is of particular concern given EPA's determination that the federal model rules are the most cost-effective manner for controlling mercury emissions from utility units. *See* 70 Fed. Reg. 28606 (May 18, 2005).

Mr. Robert Eckdale  
Page 13  
June 11, 2007

WPL welcomes further discussion with the WDNR regarding our public comment submittal.

Sincerely,

A handwritten signature in black ink, reading "Kathy Lipp". The signature is written in a cursive, flowing style with a large initial "K".

Kathy Lipp  
Chief Environmental Officer

cc: Al Shea - WDNR  
Kevin Kessler - WDNR  
Michele Pluta - WPL  
Charlie Ohl - WPL

Mr. Robert Eckdale  
Page 14  
June 11, 2007

**Attachment A**  
**Wisconsin Department of Natural Resources Public Hearing**  
**May 23, 2007 (Madison, Wisconsin)**

**Wisconsin Power and Light Company (WPL) Comments**  
**Proposed Clean Air Mercury Rule (CAMR) Board Order AM-32-05**

Good afternoon and thank you for this opportunity to provide comments on the impact of the Department's proposed Clean Air Mercury Rule (CAMR) on Wisconsin Power and Light Company and its customers. My name is Kathy Lipp. I am the Chief Environmental Officer for Alliant Energy and Wisconsin Power and Light (WPL) Company.

My company serves more than 15% of all the households and businesses in the state. We also provide electricity to municipal and wholesale utilities in the state for their customer needs. Our sources of electric generation come from a diverse fleet of generating facilities; however, our predominant source of electric generation is from coal. This rule directly effects the operations of our electric utility at four power plant locations in Wisconsin, where we operate nine generating units.

WPL's commitment to customers can be summarized by these three measures of performance:

1. Energy reliability;
2. Cost effectiveness; and
3. Environmental responsibility.

No single standard is sufficient. We consider all of these factors in developing our emissions compliance plan for generation. WPL's position presented today on this rule proposal will highlight key concerns we have on the proposed NR446 rules. Our company is continuing to review the implications of the Department's rule proposal and will also be submitting detailed written technical comments by the June 11 close of public comment period.

**First let me share with you the actions WPL is specifically taking to prepare for mercury emissions reductions at our power plants.**

WPL is installing mercury continuous emissions monitors (CEMs) at all of our coal-fired power plants to be fully operational before the 2009 compliance date for emissions reporting. These monitors will provide for long-term understanding of the mercury emissions levels from our plants and are required for compliance reporting to the EPA. WPL started installations of mercury CEMs in July 2006 at our Edgewater facility in Sheboygan County. We have accelerated the implementation of these monitors to provide

Mr. Robert Eckdale

Page 15

June 11, 2007

needed operational experience and understanding of current mercury emissions and control options.

This has not been a minor effort for our company; the emission monitoring requirements are more demanding, requiring much more than merely installing another probe and data collection equipment. There are significant structural modifications needed, such as construction of stack access platforms, elevators to address frequent CEMs maintenance needs, de-ionized water supply, electrical and computer technology connections. Significant labor resources are needed during these years of installation and testing.

Following initial equipment installation and certification, WPL expects that each plant will require at least one additional full-time person to perform necessary compliance tasks such as extensive mercury CEMs calibrations, testing certifications, routine maintenance and QA/QC checks. These monitors must be able to achieve measurements down to the parts per billion levels.

My point here is to admit that there is a significant learning curve that needs to be addressed with respect to mercury. The technology is literally changing on a day-to-day basis. Beyond measuring mercury, WPL engineering staff is also actively compiling critical plant configuration data necessary for designing mercury emissions control systems, including the selection of sorbents for pilot-testing to determine those best-suited for WPL power plants and fuel characteristics. The problem of mercury emissions control is not a one size fits all type of solution and can be impacted by a variety of plant-specific factors. Moreover, solving our mercury air emissions problems cannot be done in a vacuum, but must also recognize the resulting waste stream impacts to land and water.

Our company is a leader in beneficial reuse of our coal combustion products (CCP). In 2006, over 250,000 tons of CCP were beneficially re-used by WPL - this is a rate of about 70% overall, significantly above the national average of 42%. The reuse of CCP saves energy and natural resources while avoiding disposal in landfills. It also reduces greenhouse gas emissions at an equivalent rate of approximately one ton of CO<sub>2</sub> for every ton of fly ash substituted for cement. Unfortunately, at this time the most tested option for mercury control, activated carbon injection, alters the composition of our CCP and makes it unusable. WPL is actively seeking alternative mercury control approaches, but the feasibility and effectiveness of these options simply are not known.

WPL appreciates that these technical details are complex and believes it is important to share them with you today in order to provide better understanding of the challenges that utilities face - both in measuring and determining how to reduce power plant mercury emissions.

Mr. Robert Eckdale

Page 16

June 11, 2007

**Second, I would like to share with you our company's concerns regarding the proposed regulations.**

The rules fail to address several critical issues that cause it to be unduly burdensome. As proposed, the Wisconsin CAMR rule does not align with Federal rules. It also presents challenges with respect to technical feasibility for compliance and increased costs for WPL customers.

WPL's major concerns on the proposed rule are that it:

- Does not allow inter-state or intra-state trading;
- Does not permit banking of early mercury reductions;
- Creates an unworkable and overly complex allocation methodology;
- Inappropriately concludes that 90% control is possible at each coal-fired unit.

WPL believes that the proposed rule needs to accept trading as the Federal EPA rule allows, because there is significant uncertainty regarding the level of mercury reduction achievable, especially in the near-term. Furthermore, the Department's elimination of banking creates disincentives to implementing early mercury reductions. Simply put, there are not sufficient compliance options in the proposed rule; if a utility cannot achieve the annual mercury cap, the remaining choices include: (1) fuel switching to natural gas; (2) revising dispatch to more expensive purchase power; or, (3) de-rating or shutting down the unit. These are unworkable options for WPL.

WPL does not challenge the need to control mercury emissions from its power plants. WPL remains supportive of the additional investments required to reduce mercury from its power plants. However, these must follow - not lead - the pace of technology development. With more field experience, we will understand the emission levels that these mercury control technologies can sustain over time. WPL is committed to energy reliability, cost-effectiveness and environmental responsibility and believes that alignment with Federal policy is the best approach for our company to deliver to those commitments.